Case Study 1.1: A Yen for Vending Machines

Japan faces a steady drop in the number of working-age people. Here are three reasons why: (1) Japan’s birthrate has reached a record low, (2) Japan allows virtually no immigration (only 2 of every 1,000 workers in Japan are foreigners), and (3) Japan’s population is aging. As a result, unemployment has usually been lower in Japan than in other countries. For example, Japan’s unemployment rate in 2007 was below the U.S. rate and half that of Europe. Because labor is relatively scarce in Japan, it is relatively costly. To sell products, Japanese retailers rely more on physical capital, particularly vending machines, which obviously eliminate the need for sales clerks.

Japan has more vending machines per capita than any other country on the planet—twice as many as the United States and nearly 10 times as many as Europe. And vending machines in Japan sell a wider range of products than elsewhere, including beer, sake, whiskey, rice, eggs, beef, vegetables, pizza, entire meals, fried foods, fresh flowers, clothes, toilet paper, fishing supplies, video games, software, ebooks, toys, DVDs, mobile phone recharging, and even X-rated comic books. Japan’s vending machines are also more sophisticated. Newer models come with video monitors and touch-pad screens. Wireless chips alert vendors when supplies run low. Machines selling cigarettes or alcohol require a driver’s license to verify the buyer’s age (and the machines can spot fake IDs). Sanyo makes a giant machine that sells up to two hundred different items at three different temperatures. Some cold-drink dispensers automatically raise prices in hot weather. About 5,000 machines allow cell phone users to pay for drinks by pressing a few buttons on their phones. Some machines ring the cell phones of passersby, offering a download of Coke ringtones and a free Coke to go with it.

As noted earlier, it is common practice in the United States to shake down vending machines that malfunction. Such abuse increases the probability the machines will fail again, leading to a cycle of abuse. Vending machines in Japan are less abused, in part because they are more sophisticated and more reliable and in part because the Japanese generally have greater respect for private property and, consequently, a lower crime rate (for example, Japan’s theft rate is about half the U.S. rate).

Japanese consumers use vending machines with great frequency. For example, 40 percent of all soft-drink sales in Japan are through vending machines, compared to only 12 percent of U.S. sales. Japanese sales per machine are double the U.S. rate. Research shows that most Japanese consumers prefer an anonymous machine to a salesperson. Despite the abundance of vending machines in Japan, more growth is forecast, spurred on by a shrinking labor pool, technological innovations, and wide acceptance of machines there.


QUESTIONS
1. Do vending machines conserve on any resources other than labor? Does your answer offer any additional insight into the widespread use of vending machines in Japan?

2. Suppose you had the choice of purchasing identically priced lunches from a vending machine or at a cafeteria. Which would you choose? Why?
Case Study 1.2: College Major and Annual Earnings

Earlier in the chapter, you learned that economic choice is based on a comparison of expected marginal benefit and expected marginal cost. Surveys show that students go to college because they believe a college diploma is the ticket to better jobs and higher pay. Put another way, for nearly two-thirds of U.S. high school graduates, the expected marginal benefit of college apparently exceeds the expected marginal cost. The cost of college is discussed in the next chapter; the focus here is on the benefits of college, particularly expected earnings.

Among college graduates, all kinds of factors affect earnings, such as general ability, occupation, college attended, college major, and highest degree earned. To isolate the effects of the college major on earnings, a National Science Foundation study surveyed people in specific age groups who worked full time and had earned a bachelor’s as their highest degree. The bar graph shows the median earnings by major for men and women ages 35 to 44. As a point of reference, the median annual earnings for men was $43,199 (half earned more and half earned less). The median earnings for women was $32,155, only 74 percent that of men. Among men, the top pay was the $53,286 median earned by engineering majors; that pay was 23 percent above the median for all men surveyed. Among women, the top pay was the $49,170 median earned by economics majors; that pay was 53 percent above the median for all women surveyed.

Median Annual Earnings of 35-to-44-Year-Olds with Bachelor’s as Highest Degree, by Major

Incidentally, men who majored in economics earned a median of $49,377, ranking them seventh among 27 majors and 14 percent above the median for all men surveyed. Thus, even though the median pay for all women was only 74 percent of the median pay for all men, women who majored in economics earned about the same as men who majored in economics. We can say that economics majors earned more than most, and they experienced no pay difference based on gender.

Note that among both men and women, the majors ranked toward the top of the list tend to be more quantitative and analytical. According to the study’s author, “Employers may view certain majors as more difficult and may assume that graduates in these fields are more able and hard working, whereupon they offer them higher salaries.” The selection of a relatively more challenging major such as economics sends a favorable signal to future employers.

The study also examined the kinds of jobs different majors actually found. Those who majored in economics became mid- and top-level managers, executives, and administrators. They also worked in sales, computer fields, financial analysis, and economic analysis. Remember, the survey was limited to those whose highest degree was the baccalaureate, so it excluded the many economics majors who went on to pursue graduate studies in law, business administration, economics, public administration, journalism, and other fields (a separate study showed that lawyers with undergraduate degrees in economics earned more on average than lawyers with other majors).

A number of world leaders majored in economics, including three of the last six U.S. presidents, Philippines president Gloria Macapagal-Arroyo, who earned a PhD in the subject, U.S. Supreme Court justices Steven Breyer and Anthony Kennedy, and former justice Sandra Day O’Connor. Other economics majors include billionaire Donald Trump, eBay president (and billionaire) Meg Whitman, Microsoft chief executive officer (and billionaire) Steve Ballmer, CNN founder (and billionaire) Ted Turner, Intel president Paul Otellini, NFL Patriot’s coach Bill Belichick, Governor Arnold Schwarzenegger, high-tech guru Esther Dyson, and Scott Adams, creator of Dilbert, the mouthless wonder.


QUESTIONS
1. Because some college majors pay nearly twice as much as others, why would students pursuing their rational self-interest choose a lower paying major?
2. The Bureau of Labor Statistics maintains online copies of articles from its Monthly Labor Review. Go to the site http://stats.bls.gov/opub/mlr/mlrhome.htm, click on “Archives” and find the article by Daniel Hecker entitled “Earnings of College Graduates: Women Compared with Men” (March 1998). What can you learn about the payoff to college education for both women and men? (Note: You will need Adobe Acrobat Reader to get the full text of this article. You can download a copy at http://www.adobe.com/prodindex/acrobat/readstep.html.